



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/600,730	06/20/2003	Pantelis S. Alexopoulos	SJO90000026US1A	5903

7590 05/02/2005

David W. Lynch
CRAWFORD MAUNU PLLC.
Suite 390
1270 Northland Drive
St. Paul, MN 55120

EXAMINER

AHMED, SHAMIM

ART UNIT	PAPER NUMBER
----------	--------------

1765

DATE MAILED: 05/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

18

Office Action Summary	Application No. 10/600,730	Applicant(s) ALEXOPOULOS ET AL.	
	Examiner Shamim Ahmed	Art Unit 1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. The disclosure is objected to because of the following informalities: At page 1, the continuing data needs to be updated, such as the application Serial No. 09/687,234 is now US patent 6,714,382.

Appropriate correction is required.

Drawings

2. Figure 9a should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

4. Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. The term "negligible lift" in claim 1 is a relative term, which renders the claim indefinite. The term "negligible" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably appraised of the scope of the invention.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dorius et al (6,004,472) and in the alternative, in view of Bischoff et al (5,327,310).

Dorius et al disclose a process of making an air bearing slider, wherein a dual etch process is performed for forming air bearing structure with leading, trailing and lateral step regions along with trail pad, which resemble the claimed non-actuatable, wareable pad, which is formed by a last etching including a fourth etch surface level (col.4, lines 15-60).

Dorius et al also disclose that the pad having a predetermined height in order to reduce or optimize the minimum flying height (col.5, lines 14-22).

Dorius et al do not explicitly teach that the wearable pad having a surface are of less than 5% of a total air bearing surface.

It would have been obvious to have the surface area of the pad within the claimed range because Dorius et al teach the size of the pad is small enough to optimize or reduce the minimum flying height and minimum fly height of air bearing slider (col.5, lines 28-33).

Dorius et al do not explicitly teach that the wearable pad having a predetermined height so that wearing of the pad during the use produces an interface of zero at the desired fly height.

However, Dorius et al teach that the geometry of the pad is designed to optimize the minimum fly height and the minimum fly height distribution (col.5, lines 28-33 and lines 43-49).

Therefore, it would have been obvious that Dorius et al's pad having a predetermined height so that wearing of the pad during the use produces an interface of

Art Unit: 1765

zero at the desired fly height and provides negligible lift to the slider for optimizing the performance of the slider as taught by Dorius et al.

In the alternative, Dorius et al may not explicitly teach the formation of a non-actuable, wearable pad.

However, Bishoff et al teach a wearable pad 36 positioned at the trailing end of the air bearing structure and extending above the air bearing surface (col.5, lines 67-68, col.6, lines 1-11 and figure 7).

Bishoff et al also teach that the wearable pad 36 having relatively small area, which is formed by conventional masking and etching process for reducing the effective contact area and air bearing surface of the slider that interacts with the rotational disk and thereby increasing the operating life of the slider by reducing wear of the head and the disk (col.4, lines 6-13).

Therefore, it would have been obvious to one of ordinary skilled in the art at the time of claimed invention to combine Bishoff et al's teaching into Dorius et al's process for increasing the operating life of the slider by reducing wear of the head and the disk as taught by Bishoff et al.

As to claim 4, Bishoff et al teach that the wear pad is formed around a magnetic sensor 32 (see figure 7).

As to claim 8, Dorius et al teach that slider body is formed of a conventional ceramic mixture of titanium carbide (TiC) and alumina (Col.8, lines 61-63).

As to claims 9-11, it would have been obvious to optimize the surface area of the pad within the claimed range because Dorius et al teach that the size or geometry of the pad are designed in such for optimizing the performance of the slider.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Burbank (5,925,261) and Dovek (5,499,149) disclose conventional process of making air bearing slider.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shamim Ahmed whose telephone number is (571) 272-1457. The examiner can normally be reached on M-Thu (7:00-5:30) Every Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine G. Norton can be reached on (571) 272-1465. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1765

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shamim Ahmed
Primary Examiner
Art Unit 1765

SA
April 28, 2005